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Engagement of CD28 modulates CXC chemokine receptor 4 surface expression in both and CD3-stimulated CD4+ T cells.
J Immunol. 2000 Apr 15;164(8):4018-24.
PMID: 10754293; UI: 20219234
- ☐ 2: [Riley JL, Levine BL, Craighead N, Francomano T, Kim D, Carroll RG, June CH.](#) [Relate](#)
Naive and memory CD4 T cells differ in their susceptibilities to human immunodeficiency type 1 infection following CD28 costimulation: implications for transmission and pathogenesis.
J Virol. 1998 Oct;72(10):8273-80.
PMID: 9733871; UI: 98406235
- ☒ 3: [Carroll RG, Riley JL, Levine BL, Feng Y, Kaushal S, Ritchey DW, Bernstein W, Weislow OS, Brown CR, Berger EA, June CH, St Louis DC.](#) [Relate](#)
Differential regulation of HIV-1 fusion cofactor expression by CD28 costimulation of T cells.
Science. 1997 Apr 11;276(5310):273-6.
PMID: 9092480; UI: 97248643
- ☐ 4: [Brice GT, Mayne AE, Villinger F, Ansari AA.](#) [Relate](#)
A novel role for tumor necrosis factor-alpha in regulating susceptibility of activated CD4+ T cells from human and nonhuman primates for distinct coreceptor using lentiviruses.
J Acquir Immune Defic Syndr. 2000 May 1;24(1):10-22.
PMID: 10877490; UI: 20334001
- ☒ 5: [Riley JL, Schlienger K, Blair PJ, Carreno B, Craighead N, Kim D, Carroll RG, June CH.](#) [Relate](#)
Modulation of susceptibility to HIV-1 infection by the cytotoxic T lymphocyte antigen 4 costimulatory molecule.
J Exp Med. 2000 Jun 5;191(11):1987-97.
PMID: 10839813; UI: 20298904
- ☐ 6: [Juffermans NP, Verbon A, Olszyna DP, van Deventer SJ, Speelman P, van Der Poll T.](#) [Relate](#)
Thalidomide suppresses Up-regulation of human immunodeficiency virus coreceptors (CXCR4 and CCR5) on CD4+ T cells in humans.
J Infect Dis. 2000 May;181(5):1813-6.
PMID: 10823791; UI: 20283760
- ☐ 7: [Creson JR, Lin AA, Li Q, Broad DF, Roberts MR, Anderson SJ.](#) [Relate](#)

The model duration of anti-CD28 costimulation determine resistance to infection by macrophage-tropic strains of human immunodeficiency virus type 1 in vitro.

J Virol. 1999 Nov;73(11):9337-47.

PMID: 10516042; UI: 99445841

- ☒ 8: Carroll RG, Riley JL, Levine BL, Blair PJ, St Louis DC, June CH. Relate
The role of co-stimulation in regulation of chemokine receptor expression and HIV-1 i
in primary T lymphocytes.
Semin Immunol. 1998 Jun;10(3):195-202. Review.
PMID: 9653046; UI: 98317006
- ☐ 9: Moriuchi H, Moriuchi M, Fauci AS. Relate
Cloning and analysis of the promoter region of CCR5, a coreceptor for HIV-1 entry.
J Immunol. 1997 Dec 1;159(11):5441-9.
PMID: 9548484; UI: 98208263
- ☐ 10: Garzino-Demo A, DeVico AL, Gallo RC. Relate
Chemokine receptors and chemokines in HIV infection.
J Clin Immunol. 1998 Jul;18(4):243-55. Review.
PMID: 9710741; UI: 98376600
- ☒ 11: Landay AL, Patterson B, Andersson J. Relate
Cytokine modulation of HIV-1 chemokine receptor expression.
Nat Med. 1999 Jun;5(6):592-3. No abstract available.
PMID: 10371480; UI: 99297890
- ☐ 12: Wang JM, Oppenheim JJ. Relate
Interference with the signaling capacity of CC chemokine receptor 5 can compromise i
as an HIV-1 entry coreceptor in primary T lymphocytes.
J Exp Med. 1999 Sep 6;190(5):591-5. Review. No abstract available.
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- ☒ 13: Riley JL, Carroll RG, Levine BL, Bernstein W, St Louis DC, Weislow OS, June CH. Relate
Intrinsic resistance to T cell infection with HIV type 1 induced by CD28 costimulation.
J Immunol. 1997 Jun 1;158(11):5545-53.
PMID: 9164979; UI: 97307637
- ☒ 14: Carlesimo M, Pontesilli O, Varani AR, Bernardi ML, Mazzone AM, Rosso R, Guerra EC, Cassone A, Paganelli R, Aiuti F. Relate
CD28 costimulation and T lymphocyte proliferative responses in HIV-1 infection.
Clin Exp Immunol. 1997 Sep;109(3):406-11.
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- ☒ 15: Levine BL, Mosca JD, Riley JL, Carroll RG, Vahey MT, Jagodzinski LL, Wagner KF, Mayers DL, Burke DS, Weislow OS, St Louis DC, June CH. Relate
Antiviral effect and ex vivo CD4+ T cell proliferation in HIV-positive patients as a res
CD28 costimulation.
Science. 1996 Jun 28;272(5270):1939-43.
PMID: 8658167; UI: 96275689

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GeneCard for CXCR4

HUGO gene nomenclature committee CXCR4 (chemokine (C-X-C motif), receptor 4 (fusin))

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Synonyms (according to GDB)

- NPY3R
- chemokine (C-X-C motif), receptor 4 (fusin)
- D2S201E
- HM89
- NPYR
- LESTR
- NPYY3R
- HSY3RR
- fusin
- NPYY3
- neuropeptide Y receptor Y3

CXCR4 in other gene-based resources

GDB ID: 230002 LocusLink ID: 7852 euGene ID: HUgn7852

Chromosomal location: (according to OMIM or LocusLink, and/or UDB)

chromosome: 2 OMIM cytogenetic band: 2q21

Unified DataBase coordinate (from pter): 158.8 ± 1.4 Mb

Proteins: (according to SWISS-PROT, MIPS, and BLOCKS)

CCR4_HUMAN: c-x-c chemokine receptor type 4 (cxc-r4) (cxc-r4) (sdf-1 receptor)(stromal cell-derived factor 1 receptor) (fusin) (leukocyte-derived seven transmembrane domain receptor) (lestr) (lcr1) (fb22) (npyl)(hm89). --gene: cxcr4. [352 amino acids; 39 kd]

- **function:** receptor for the c-x-c chemokine sdf-1. transduces a signal by increasing the intracellular calcium ions level. acts as a co-receptor with cd4 for syncytium-inducing strains (si) (t- cell-line-adapted) of hiv-1 virus. it promotes env-mediated fusion of the virus.
- **subcellular location:** integral membrane protein.
- **similarity:** belongs to family 1 of g-protein coupled receptors.
- **caution:** was originally thought to be a receptor for neuropeptide y, type 3 (npyl3-r).
- **MIPS Pedant Viewer:** 67669 67668 67670 67671
- **Blocks protein family:** BL00237 G-protein coupled receptors proteins.

Sequences (GenBank/EMBL/DDBJ accessions according to Unigene or GenBank, RefSeq according to LocusLink, assembly according to MIPS and/or DOTS and/or UCSC)

Unigene Cluster for CXCR4: (Build 126; Nov 14 2000)
chemokine (C-X-C motif), receptor 4 (fusin)
Hs.89414 [show with all ESTs]

Unigene Representative Sequence: AF147204

REFSEQ mRNAs: NM_003467

MIPS assembly:
H54913S2 H54913S1 H54913S3 H54913S4

DOTS assembly: 157119

UCSC draft assembly: AF147204

Additional Gene/cDNA sequence:

[F005058](#) [AF025375](#) [AF052572](#) [AF147204](#) [AJ12869](#)
[D10924](#) [L01639](#) [L06797](#) [M99293](#) [X71635](#)
[Y14739](#)

Similar genes in other organisms:

(according to [MGD](#) Nov 13 2000)

Mammalian homologues:

	<i>gene</i>	<i>locus</i>	<i>description</i>	<i>Genbank accessions</i>
mouse	Cmkar4	1 (67.40 cM)	chemokine (C-X-C) receptor 4	AB000803 D87747 U59760 U65580 X99581 X99582 Z80111 Z80112

Disorders & Mutations

(in which this gene is involved, according to [OMIM](#), [SWISS-PROT](#), [Genatlas](#), [HGMD](#), [TGDB](#), and/or [BCGD](#))

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Medical News

(possibly related articles in [Doctor's Guide](#))

- [Small Molecule Blocks Cell-Surface Receptor Needed For HIV-1 Infection](#)
- [Scientists Find New Way To Help Blood Cells Fight HIV Infection](#)
- [Scientists Find Way To Short-Circuit Initial HIV Invasion](#)
- [STDs, Elevated Progesterone Raise HIV Infection Risk For Women](#)
- [Specifically Targeting HIV-Infected Cells: A New Gene-Therapy Approach](#)
- [Trojan Horse Virus Controls HIV Infection](#)

Research Articles:

(in [PubMed](#))

- [Genomic organization and promoter characterization of human **CXCR4** gene.](#)

Search PubMed for CXCR4

to find abstracts of **research articles** containing this gene name

Additional Sources of Information on the web

name

[Genatlas](#) biochemistry entry for CXCR4:

fusin, chemokine (CXC) motif, receptor 4, preferentially expressed on the more immature CD34+ hematopoietic stem cells, G protein coupled receptor superfamily, required for entry of T cell line-tropic strains HIV-1 into CD4 cells, bovine locus coeruleus homolog

[Search RZPD](#) for clones of CXCR4

Search the web for CXCR4

description

Links to **sequences**, **linkage data**, **maps**, and **papers**

Clone collection at the German Human Genome Project, Resource Center

search millions of **Web pages** with **Excite** to find articles, personal homepages, conferences, discussions, and other web sites related to **CXCR4!**